

E:fact[®] Technical Service Data

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SANYO

Model
DS27780

Chassis
27780-00

SCHEMATIC NOTES

**For SAFETY use only equivalent replacement part,
see parts list.**

✕ Circuitry not used in some versions.

--- Circuitry used in some versions.

⏏ Ground

⏏ Chassis ground

▽ Common tie point

△ Taken from common tie point

3 Schematic voltage source tie point.

A— Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.

Waveforms taken with triggered scope and keyed rainbow generator. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.

Supply voltages maintained as seen at input.

Voltages measured with digital meter and a 1000μV RF signal, with colorbar pattern, applied to antenna terminal.

Controls adjusted for normal operation.

Capacitors are 50 volts or less, 5% or greater unless noted.

Electrolytic capacitors are 50 volts or less,

20% or greater unless noted.

Resistors are 1/2W or less, 5% or greater unless noted.

Value in () used in some versions.

Measurements with switching as shown, unless noted.

Rated voltage shown on zener diodes.

PARTS LIST

COILS & TRANSFORMERS

Item No.	Function/Rating	Mfr. Part No.
L101	-	-
L142	15 μ H	645 003 9713
	15 μ H	645 016 2657
L164	22 μ H	645 003 9782
	22 μ H	645 016 2831
L166	33 μ H	645 003 9812
	33 μ H	645 016 2985
L201	10 μ H	645 001 4567
	10 μ H	645 016 2534
L302	15 μ H	610 029 7388
	15 μ H	645 007 9627
L303	18 μ H	610 029 7425
	18 μ H	645 007 9719
L315	8.2 μ H	610 029 7883
	8.2 μ H	645 008 0395
L401	Filter	610 032 4381
	Filter	610 032 4404
	Filter	645 021 2727
L402	Ferrite Bead	610 031 9998
L403	Ferrite Bead	610 078 6820
L404	120 μ H	610 029 8200
	120 μ H	645 007 9597
# L413	Horizontal Linearity	610 000 0858
	Horizontal Linearity	610 000 0872
L601	Ferrite Bead	610 078 6820
L623	Ferrite Bead	610 078 6820
L624	82 μ H	645 005 5423
	82 μ H	645 007 8156
L625	Ferrite Bead	610 078 6820
L801, 02, 06	5.6 μ H	645 008 2894
	5.6 μ H	645 016 3104
L811	5.6 μ H	610 029 7760
	5.6 μ H	645 008 0180
L823	5.6 μ H	645 008 2894
	5.6 μ H	645 016 3104
L826	82 μ H	645 003 9898
	82 μ H	645 016 3258
L841, 42	5.6 μ H	645 008 2894
	5.6 μ H	645 016 3104
# L901	Degaussing	610 229 3210
	Degaussing	645 022 8674
# L902 (1)	Yoke Horz 1.0mH Vert 18.0mH	-
L8006	5.6 μ H	645 008 2894
	5.6 μ H	645 016 3104
# LF601	Line Filter	645 012 0589
T131	FM Detect	610 037 7615
T151	VCO, 45.75MHz	645 000 5206
T161	AFT	610 037 6564
T401	Horizontal Drive	610 000 1138
	Horizontal Drive	610 223 1663
# T402 (2)	Horizontal Output	645 018 9579
# T601	Power	645 021 6572
# T681	Power	610 033 3925

For SAFETY use only equivalent replacement part.

(1) Part of CRT.

(2) Focus and screen controls are part of T402.

PARTS LIST continued

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
# A101 (1)	Tuner	645 020 9208	UHF/VHF
A1901	Receiver	645 021 1041	Remote
# F601	Fuse	423 007 1601	4Amp, 125V, Fast Acting
	Fuse	423 007 1809	4Amp, 125V, Fast Acting
	Fuse	423 018 8101	4Amp, 125V, Fast Acting
F601A	Fuse Holder	645 000 5077	For F601
	Fuse Holder	645 016 0479	For F601
F601B	Fuse Holder	645 000 5077	For F601
	Fuse Holder	645 016 0479	For F601
# K701	Socket	610 010 4181	CRT
	Socket	645 017 2588	CRT
K1001	Jack	610 010 3689	Video In
K1002	Jack	610 010 3665	Audio Input Right
K1003	Jack	610 010 3672	Audio Input Left
K1011	Jack	610 010 3665	Variable Right Audio Out
K1021	Jack	610 010 3672	Variable Left Audio Out
K1051	Jack	610 010 8295	S-Video
L301	Delay Line	645 009 6013	-
# Q900	CRT	414 009 3106	A68AHD32X04
# RL601	Relay	645 000 4155	Power
	Relay	645 011 2713	Power
	Relay	645 015 8629	Power
	Relay	645 024 7828	Power
SP901, 02	Speaker	610 055 6614	3" X 3", 8 Ohms, 2W
SW701	Switch	610 011 4227	Service
SW1901	Switch	645 004 3062	Power
SW1902	Switch	645 004 3062	Volume Up
SW1903	Switch	645 004 3062	Volume Down
SW1904	Switch	645 004 3062	Channel Up
SW1905	Switch	645 004 3062	Channel Down
SW1906	Switch	645 004 3062	Menu
# W601	Line Cord	645 014 2444	Polarized
	Line Cord	645 023 1698	Polarized
# W900	Connector	610 245 9562	Ground
X141	Filter	421 006 3206	SAW
X153	Filter	610 015 2946	4.5MHz
X161	Trap	610 015 3059	4.5MHz
X251	Crystal	610 012 0655	3.58MHz
	Crystal	610 204 4195	3.58MHz
	Crystal	610 245 9746	3.58MHz
X401	Crystal	610 012 2970	503.5kHz
	Crystal	645 003 4107	503.5kHz
X801	Crystal	645 000 5299	12.0MHz
X8002	Crystal	610 234 9085	-
X8003	Crystal	610 234 9085	-
	PC Board	610 266 6212	A/V
	PC Board	610 266 1644	CRT
	PC Board	610 266 6205	Main
	PC Board	610 265 0440	PIP
	PC Board	610 259 4423	Remote
	Transmitter	645 023 5757	Remote

For SAFETY use only equivalent replacement part.

(1) Contact TNI Electronics for replacement; order by part number on tuner.

PARTS LIST continued

CONTROLS & RESISTORS

Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
# PS601	6.8 Cold PTC	408 000 3203	-
# R009, 10	2.2 5% 1/4W	401 015 6603	QW2D2
# R104	270 5% 1W	401 060 7402	1W127
# R407	4700 5% 2W	401 068 4700	2W247
# R411	6.8 10% 8W Wirewound	402 057 2707	-
	6.8 10% 8W Wirewound	402 067 8201	-
	6.8 10% 7W Wirewound	402 076 9107	-
# R418	2700 5% 1/2W Nonflammable	401 009 1607	HW227
# R421	1300 1% 1/6W	401 052 8608	-
# R422	10K 1% 1/6W	401 052 6802	-
# R423	3300 1% 1/6W	401 053 2605	-
# R481	33 5% 1/2W Nonflammable	401 009 4905	HW033
# R482	1 5% 1/4W Nonflammable	401 011 9004	QW1D0
# R483	1 5% 1/2W Nonflammable	401 006 7701	HW1D0
# R484	5.6 5% 2W	401 068 6209	2W5D6
# R486	8.2 5% 1W	401 063 4606	1W8D2
	R492 33K 1% 1/6W	401 115 8504	-
# R497	2.2 5% 1W	401 059 9608	1W2D2
# R511	180 5% 1W	401 059 6706	1W118
# R601	1 10% 8W Wirewound	402 057 5104	-
	1 10% 7W Wirewound	402 076 6908	-
# R602	3.3M 10% 1/2W	402 000 0705	HW533
# R604	5.6 5% 2W	401 068 6209	2W5D6
# R613	56 5% 2W	401 068 6902	2W056
	R616 3300 2% 1/6W	401 026 4209	-
	R617 1000 2% 1/6W	401 024 6908	-
# R618	56 5% 2W	401 068 6902	2W056
	R622 3600 2% 1/6W	401 026 5701	-
# R623	33 5% 2W	401 067 4206	2W033
# R626	27 5% 2W	401 066 9103	2W027
# R711, 12, 13	12K 5% 1W	401 065 4604	1W312
	R858 15K 1% 1/6W	401 052 9308	-
	R860 6800 1% 1/6W	401 053 4708	-
	R3403 45.3K 1% 1/6W	401 103 1503	-
	R3404 47K 1% 1/6W	401 095 0409	-
	R3421 43K 1% 1/6W	401 180 8006	-
	VR141 10K RF AGC	645 001 9319	-
	10K RF AGC	645 006 5095	-
	10K RF AGC	645 023 5153	-
	VR300 470 Y/C Separator	645 017 4711	-
	VR501 50K Vertical Size	645 001 9364	-
	50K Vertical Size	645 006 5217	-
	50K Vertical Size	645 023 5207	-
	VR701 10K Red Bias	610 020 2629	-
	VR702 10K Green Bias	610 020 2629	-
	VR703 10K Blue Bias	610 020 2629	-
	VR704 200 Red Drive	610 020 2612	-
	VR705 200 Blue Drive	610 020 2612	-
	VR3403 20K 1.5FH Bandpass Filter	645 006 2421	-
	20K 1.5FH Bandpass Filter	645 006 5132	-
	20K 1.5FH Bandpass Filter	645 006 5132	-
	VR3406 20K VCO	645 006 2421	-
	20K VCO	645 006 5132	-
	20K VCO	645 023 5177	-
	VR3411 5000 High Separation	645 006 2476	-
	5000 High Separation	645 006 5200	-
	5000 High Separation	645 023 5191	-
	VR3421 10K Low Separation	645 001 9319	-
	10K Low Separation	645 006 5095	-
	10K Low Separation	645 023 5153	-

For SAFETY use only equivalent replacement part.

PARTS LIST continued

CAPACITORS & ELECTROLYTICS

Item No.	Rating	Mfr. Part No.
C161	56pF 5% 50V N220	403 028 2009
C305	40pF Trimmer	610 003 0381
# C411	680pF 10% 3kV	403 232 3403
	680pF 10% 3kV	403 324 3007
# C412	.012 3% 1.5kV	404 066 4109
# C416	.2 5% 200V	403 082 8009
# C417	.2 5% 200V	403 082 8009
C493	2.2μF 20% 100V NP	404 056 5307
# C601	.068 10% 250V	404 072 7903
	.068 10% 275V	404 073 7506
	.068 10% 275V	404 073 7506
# C606	.0022 20% 125V	404 008 6802
# C608	.0047 10% 1kV	403 165 9404
	.0047 1kV	403 232 0600
# C625	.0027 10% 1kV	403 232 0402
# C632	.001 10% 125V	404 008 6604
# C708	680pF +80% -20% 2kV	403 077 2807
	680pF +80% -20% 2kV	403 175 3409
	680pF 2kV	403 175 3409
C3533	.47μF 50V NP	403 086 1808
VC801	40pF Trimmer	610 003 0381

For SAFETY use only equivalent replacement part.

PARTS LIST continued

CABINET PARTS

Item	Mfr. Part No.
Badge	610 236 9274
Button Assembly	610 257 8614
Cabinet Front	610 266 0524
Cabinet Rear	610 266 9244

Remote Transmitter

Battery Cover	610 259 4522
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SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.
D101	RD36EB1	407 056 2307	ECG5037A	NTE5037A	SK36A
	UZ-36BCA	407 163 9503	-	-	-
D102	RD5.1EB2	407 056 8002	ECG5010A	NTE5010A	SK5A1
	RD5.1EB3	407 056 8200	ECG5010A	NTE5010A	SK5A1
	UZ-5.1BCB	407 151 8402	-	-	-
	UZ-5.1BCC	407 163 8209	-	-	-
D201	DS442X	407 005 4505	ECG519	NTE519	SK3100
	GMA01	407 007 9904	ECG519	NTE519	SK3100
	ISS133	407 012 4406	ECG519	NTE519	SK3100
	ISS176	407 012 5809	ECG177	NTE177	SK9091
	IS1555	407 013 1206	ECG177	NTE177	SK9091
	IS2076	407 013 4207	ECG177	NTE177	SK9091
	IS2473	407 013 7109	ECG177	NTE177	SK9091
	1N4148	408 008 2406	ECG519	NTE519	SK3100
D351	IS1553	407 013 1008	ECG177	NTE177	SK9091
	IS2076A	407 013 4306	ECG519	NTE519	SK3100
	IS2471	407 013 6508	ECG519	NTE519	SK3100
	1N4148	407 008 2406	ECG519	NTE519	SK3100
D361	DS442X	407 005 4505	ECG519	NTE519	SK3100
	GMA01	407 007 9904	ECG519	NTE519	SK3100
	ISS133	407 012 4406	ECG519	NTE519	SK3100
	ISS176	407 012 5809	ECG177	NTE177	SK9091
	IS1555	407 013 1206	ECG177	NTE177	SK9091
	IS2076	407 013 4207	ECG177	NTE177	SK9091
	IS2473	407 013 7109	ECG177	NTE177	SK9091
	1N4148	407 008 2406	ECG519	NTE519	SK3100
# D421, 22	HZ11B2L	407 158 1307	ECG5020A	NTE5020A	SK11A
D428	RD15EB1	407 054 5906	ECG5023A	NTE5023A	SK14A
	UZ-15BCA	407 163 8100	-	-	-
D429	DS442X	407 005 4505	ECG519	NTE519	SK3100
	GMA01	407 007 9904	ECG519	NTE519	SK3100
	ISS133	407 012 4406	ECG519	NTE519	SK3100
	ISS176	407 012 5809	ECG177	NTE177	SK9091
	IS1555	407 013 1206	ECG177	NTE177	SK9091
	IS2076	407 013 4207	ECG177	NTE177	SK9091
	IS2473	407 013 7109	ECG177	NTE177	SK9091
	1N4148	407 008 2406	ECG519	NTE519	SK3100
D481	ES1	407 007 6606	ECG552	NTE552	SK9000
	RMPG06G	407 124 5506	ECG552	NTE552	SK9000
	ERA18-04	407 124 6404	ECG552	NTE552	SK9000
D482	TVR1G	407 011 4407	ECG552	NTE552	SK9000
D483	ES1	407 007 6606	ECG552	NTE552	SK9000
	RMPG06G	407 124 5506	ECG552	NTE552	SK9000
	ERA18-04	407 124 6404	ECG552	NTE552	SK9000
D486	RD10EB2	407 054 0008	ECG5019A	NTE5019A	SK10A
	UZ-10BCB	407 151 1304	-	-	-
D487, 501	ERA15-02	407 005 8602	ECG552	NTE552	SK9000
	S5277B	407 011 3004	ECG552	NTE552	SK9000
	MPG06D	407 088 6502	ECG552	NTE552	SK9000
	1N4002ID	408 009 9404	ECG116	NTE116	SK3311
D503	RD36EB1	407 056 2307	ECG5037A	NTE5037A	SK36A
	UZ-36BCA	407 163 9503	-	-	-
# D601, 02, 03, 04	EM2B	407 005 7605	ECG125	NTE125	SK3081
	IS1887A	407 013 3200	ECG552	NTE552	SK9000
	GP15G	408 008 8606	ECG125	NTE125	SK3081
D609	ES1Z	407 007 6903	ECG552	NTE552	SK9000
	RMPG06D	407 124 5605	ECG587	NTE587	SK9937
	ERA18-02	407 124 6503	ECG552	NTE552	SK9000
	BYD33D	408 009 9008	ECG552	NTE552	SK9000

For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.
D610	1S1553	407 013 1008	ECG177	NTE177	SK9091
	1S2076A	407 013 4306	ECG519	NTE519	SK3100
	1S2471	407 013 6508	ECG519	NTE519	SK3100
	1N4148	408 008 2406	ECG519	NTE519	SK3100
D611	RD7.5EB1	407 057 6304	ECG5015A	NTE5015A	SK7A5
	UZ-7.5BCA	407 151 8808	ECG5015A	NTE5015A	SK7A5
# D612	PC817C	407 104 2402	ECG3098	NTE3098	SK9763
	PC817D	407 106 6101	ECG3098	NTE3098	SK9763
	0N3131S	407 147 5705	-	-	-
	TLP621-1-BL	407 175 9904	ECG3098	NTE3098	SK10178
D614	1S1553	407 013 1008	ECG177	NTE177	SK9091
	1S2076A	407 013 4306	ECG519	NTE519	SK3100
	1S2471	407 013 6508	ECG519	NTE519	SK3100
	1N4148	408 008 2406	ECG519	NTE519	SK3100
# D621	RU2	407 007 7603	ECG552	NTE552	SK9000
# D622	RD12EB1	407 054 3108	ECG5021A	NTE5021A	SK12A
	UZ-12BCA	407 164 6808	-	-	-
# D624	RU3YX	407 106 2806	ECG588	NTE588	SK9938
# D625A	RU4AMLF-L1	407 129 7000	ECG580	NTE580	SK5036
D681	ERA15-02	407 005 8602	ECG552	NTE552	SK9000
	S5277B	407 011 3004	ECG552	NTE552	SK9000
	MPG06D	407 088 6502	ECG552	NTE552	SK9000
	1N4002ID	408 009 9404	ECG116	NTE116	SK3311
D683	DS442X	407 005 4505	ECG519	NTE519	SK3100
	GMA01	407 007 9904	ECG519	NTE519	SK3100
	1SS133	407 012 4406	ECG519	NTE519	SK3100
	1SS176	407 012 5809	ECG177	NTE177	SK9091
	1S1555	407 013 1206	ECG177	NTE177	SK9091
	1S2076	407 013 4207	ECG177	NTE177	SK9091
	1S2473	407 013 7109	ECG177	NTE177	SK9091
	1N4148	407 008 2406	ECG519	NTE519	SK3100
D684	RD5.6EB3	407 057 0104	ECG5011A	NTE5011A	SK5A6
	UZ-5.6BCC	407 151 8501	ECG5011A	NTE5011A	SK5A6
D804, 06	ERA15-02	407 005 8602	ECG552	NTE552	SK9000
	S5277B	407 011 3004	ECG552	NTE552	SK9000
	MPG06D	407 088 6502	ECG552	NTE552	SK9000
	1N4002ID	408 009 9404	ECG116	NTE116	SK3311
D831	RD4.3EB2	407 056 4707	ECG5008A	NTE5008A	SK4A3
	UZ-4.3BCB	407 164 9601	-	-	-
D834	RD22EB2	407 055 1806	-	-	-
	UZ-20BCB	407 164 7904	-	-	-
D836, 43, 51	DS442X	407 005 4505	ECG519	NTE519	SK3100
	GMA01	407 007 9904	ECG519	NTE519	SK3100
	1SS133	407 012 4406	ECG519	NTE519	SK3100
	1SS176	407 012 5809	ECG177	NTE177	SK9091
	1S1555	407 013 1206	ECG177	NTE177	SK9091
	1S2076	407 013 4207	ECG177	NTE177	SK9091
	1S2473	407 013 7109	ECG177	NTE177	SK9091
	1N4148	407 008 2406	ECG519	NTE519	SK3100
D1051, 52, 53	RD13EB2	407 054 4709	ECG5022A	NTE5022A	SK13A
	RD13EB3	407 054 4808	ECG5022A	NTE5022A	SK13A
	UZ-13BCC	407 163 8001	-	-	-
	UZ-13BCA	407 163 9206	-	-	-
IC001	LA4261	409 017 7505	ECG1685	NTE1685	SK9948
# IC101	LA7673	409 274 3302	-	-	-
# IC501	LA7838	409 173 2802	ECG7039	NTE7039	-
# IC601	SE130NH	409 172 8102	-	-	-
IC801	LC864128W-5E21	410 273 2401	-	-	-

For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.
IC802	ST24C01B1	409 270 0008	-	-	-
	24LC01B/P	409 321 0902	-	-	-
	XLS24C01AP	409 321 7307	-	-	-
	AT24C01A-10PC-2.5	410 243 3803	-	-	-
IC1081	TC4053BP	409 051 3006	ECG4053B	NTE4053B	SK4053B
IC3401	CXA1534S	409 272 3205	-	-	-
IC3601	CXA1279AS	409 279 3109	-	-	-
IC8001	MC44461B	409 392 7305	-	-	-
IC8002	MC78M05CT	409 172 1509	ECG960	NTE960	SK3591
	BA178M05T	409 241 5407	ECG960	NTE960	SK3591
	UPC78M05AHF	409 320 5700	ECG960	NTE960	SK3591
	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
Q001	2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
	2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
	2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
	2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
	2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
	2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
	2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
	2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
	2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
	2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
	2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
Q161	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132
	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132
	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
Q213, 81	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132
	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132
	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
	2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
	2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
	2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
Q303, 04, 06	2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
	2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
	2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
	2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
	2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
	2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
	2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
	2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132
Q371, 72	2SC2271-D-CTV	405 013 6207	ECG399	NTE399	SK9352
	2SC2271-E-CTV	405 013 6306	ECG399	NTE399	SK9352
Q401					

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.	
# Q402	2SD1879	-	ECG2331	NTE2331	SK10088	
	2SD1879-CTV-YB	405 082 2407	ECG2331	NTE2331	SK10088	
	Q481, 86	2SD400-E-MP	405 023 5009	ECG382	NTE382	SK3849
		2SD400-F-MP	405 023 5306	ECG382	NTE382	SK3849
	Q491	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
		2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
		2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
		2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
		2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
		2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
		2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
		2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
		2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
		2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
		2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
		2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
# Q601		2SC4423-CTV	405 095 9004	ECG2308	NTE2308	SK4908
		Q604	2SC3807-R-CTV-YA	405 058 0208	ECG2504	NTE2504
	Q605	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
		2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
		2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
		2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
		2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
		2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
		2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
		2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132
	Q621	2SD1913-Q-RA	405 059 9804	ECG152	NTE152	SK3893
		2SD1913-R-RA	405 059 9903	ECG152	NTE152	SK3893
	Q641, 81	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
		2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
		2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
		2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
		2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
		2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
		2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
		2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
		2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
Q682		2SD400-E-MP	405 023 5009	ECG382	NTE382	SK3849
		2SD400-F-MP	405 023 5306	ECG382	NTE382	SK3849
Q701, 03, 05		2SC2621-D-RA	405 041 6507	ECG157	NTE157	SK3747
		2SC2621-E-RA	405 041 6705	ECG157	NTE157	SK3747
Q831		2SC2621-C-RA	405 066 4304	ECG157	NTE157	SK3747
	2SC2688(1)-K	405 066 9903	ECG157	NTE157	SK3747	
	2SC2688(1)-L	405 067 0008	ECG157	NTE157	SK3747	
	2SC2688(1)-M	405 067 0107	ECG157	NTE157	SK3747	
	2SC3620(LB-SAN-1)	406 000 3605	ECG157	NTE157	SK3747	
	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132	
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132	
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932	
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932	
	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A	
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A	
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132	
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132	

For SAFETY use only equivalent replacement part.

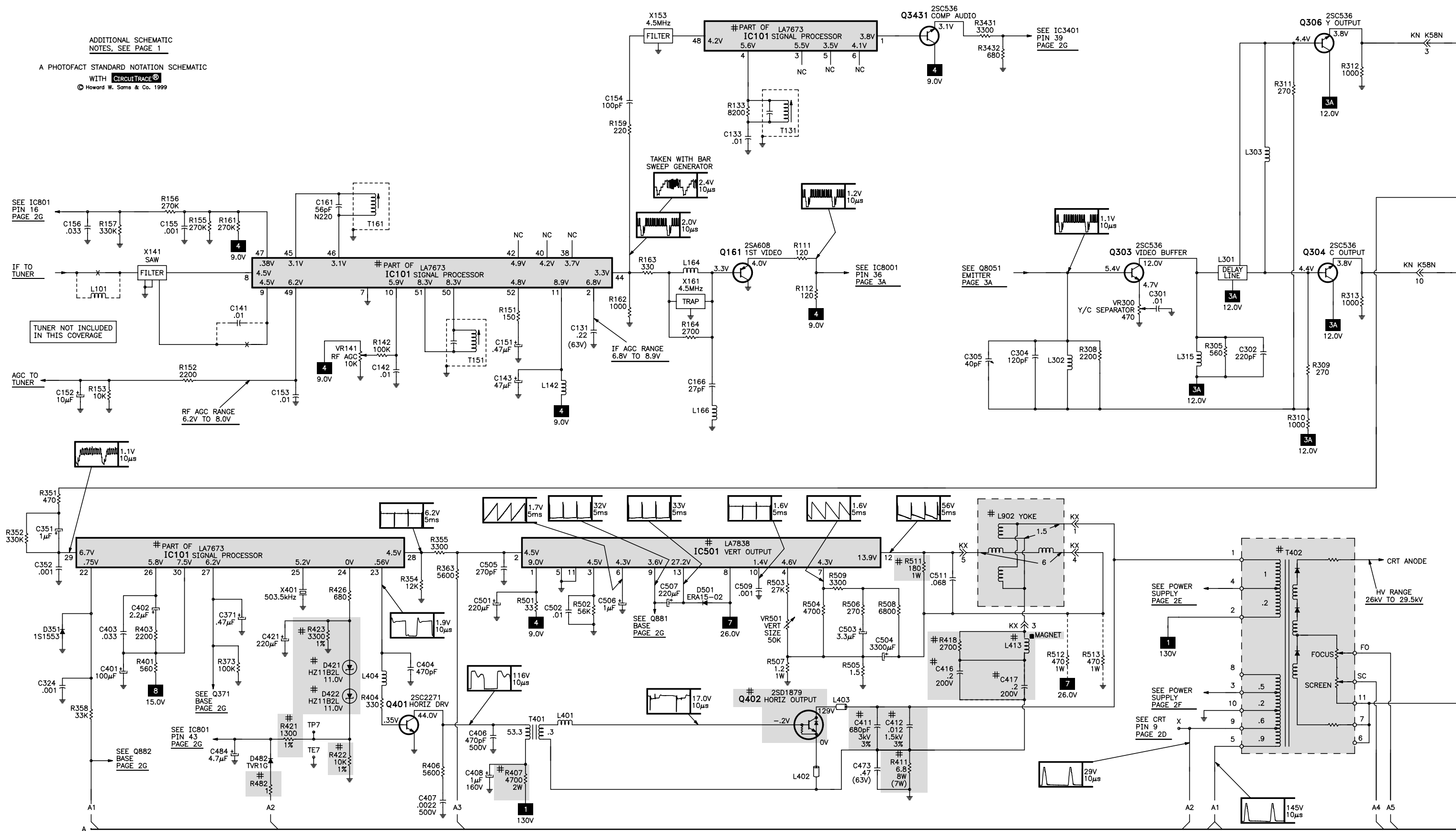
SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

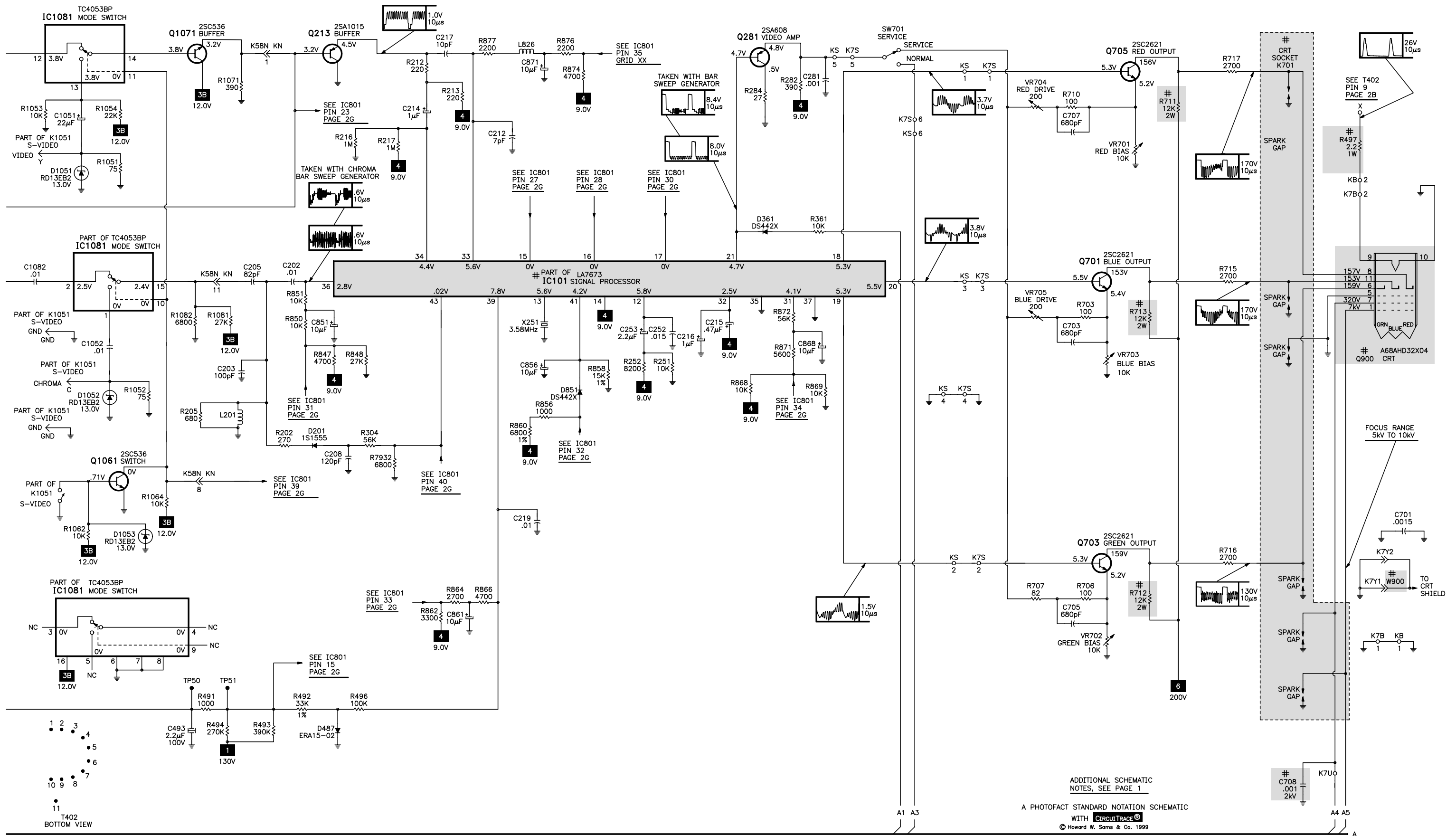
Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.
Q881, 82	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
	2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
	2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
	2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
	2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
	2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
	2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
	2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
	2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
	2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
	2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
	2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
Q1011, 21, 61, 71	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
	2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
	2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
	2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
	2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
	2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
	2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
	2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
	2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
	2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
	2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
	2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
Q3431	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
	2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
	2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
	2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
	2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
	2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
	2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
	2SC536-F-NP	405 019 2708	ECG85	NTE85	SK3245
	2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
	2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
	2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
	2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
Q3501, 02, 21, Q3522, 31, 32	2SC1740S-Q	405 011 8401	ECG85	NTE85	SK3122
	2SC1740S-R	405 011 8500	ECG85	NTE85	SK3122
	2SC1740S-S	405 011 8609	ECG85	NTE85	SK3122
	2SC1815-GR	405 012 2002	ECG85	NTE85	SK3124A
	2SC1815-0	405 012 2101	ECG85	NTE85	SK3124A
	2SC1815-Y	405 012 2309	ECG85	NTE85	SK3124A
	2SC536-E-NP	405 019 1909	ECG85	NTE85	SK3245
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	2SC536-G-NP	405 019 3804	ECG85	NTE85	SK3245
	2SC945A-PA	405 020 7501	ECG85	NTE85	SK3124A
	2SC945A-QA	405 020 7709	ECG85	NTE85	SK3124A
	2SC945A-RA	405 020 7907	ECG85	NTE85	SK3124A
Q8051	2SA1015-O(SAN)	405 001 7407	ECG290A	NTE290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	ECG290A	NTE290A	SK9132
	2SA564A-Q(CU)	405 004 3109	ECG290A	NTE290A	SK3932
	2SA564A-R(CU)	405 004 3208	ECG290A	NTE290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	ECG290A	NTE290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	ECG290A	NTE290A	SK3114A
	2SA933S-Q	405 006 1707	ECG290A	NTE290A	SK9132
	2SA933S-R	405 006 1806	ECG290A	NTE290A	SK9132

B

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D



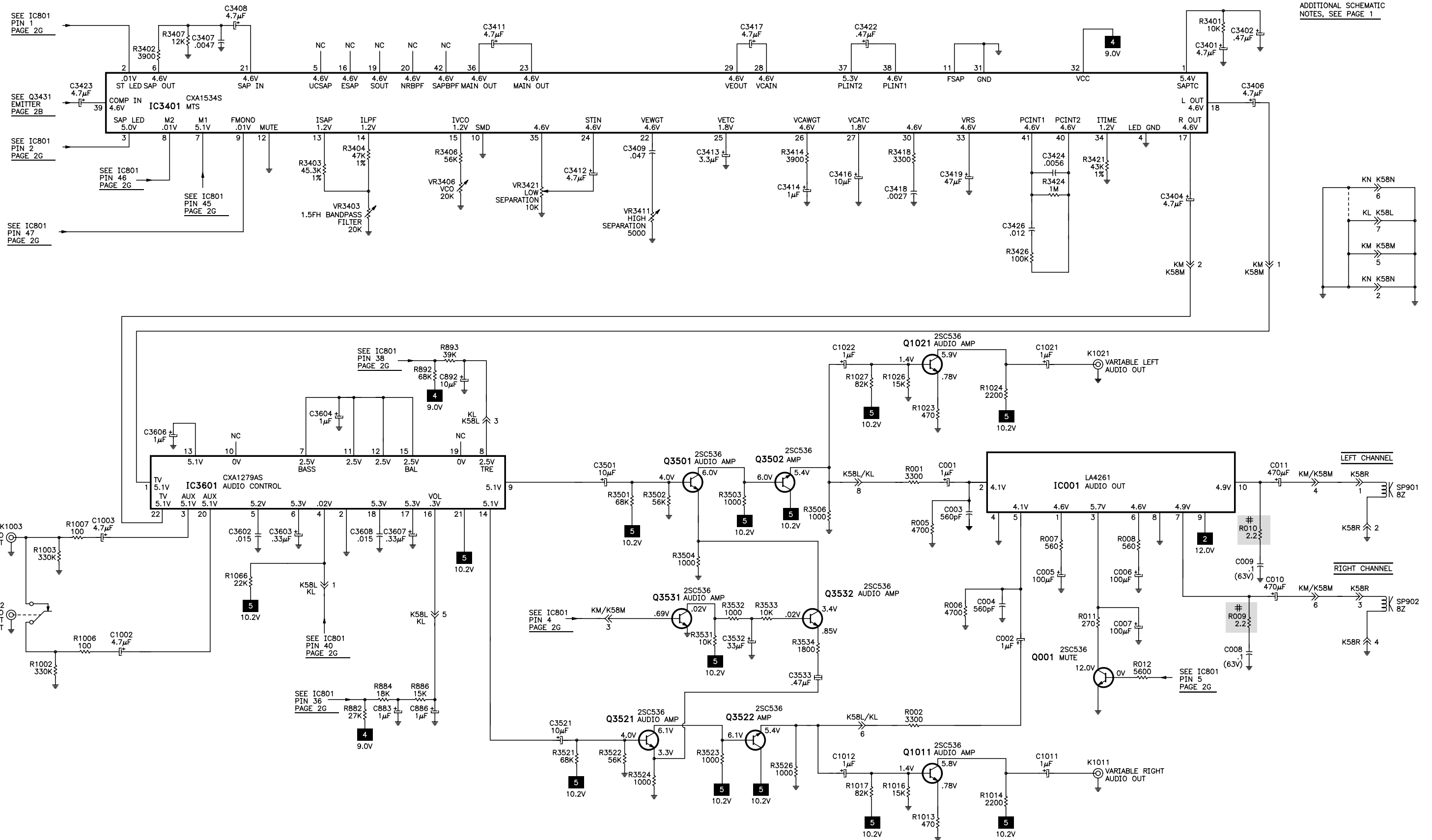
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H

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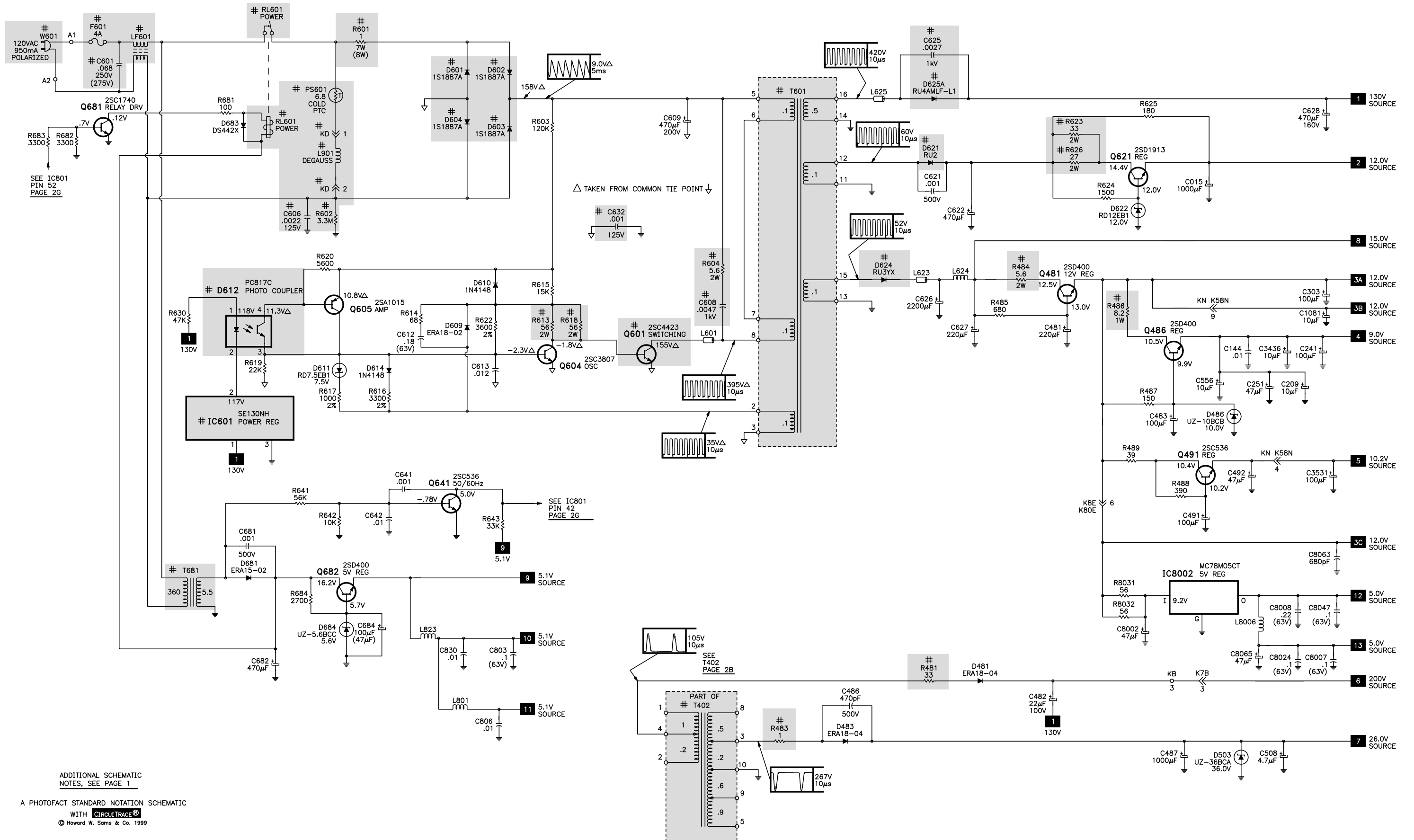
ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1

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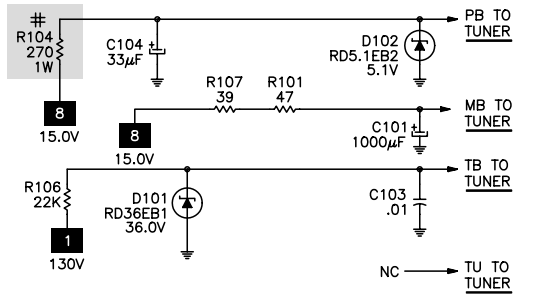


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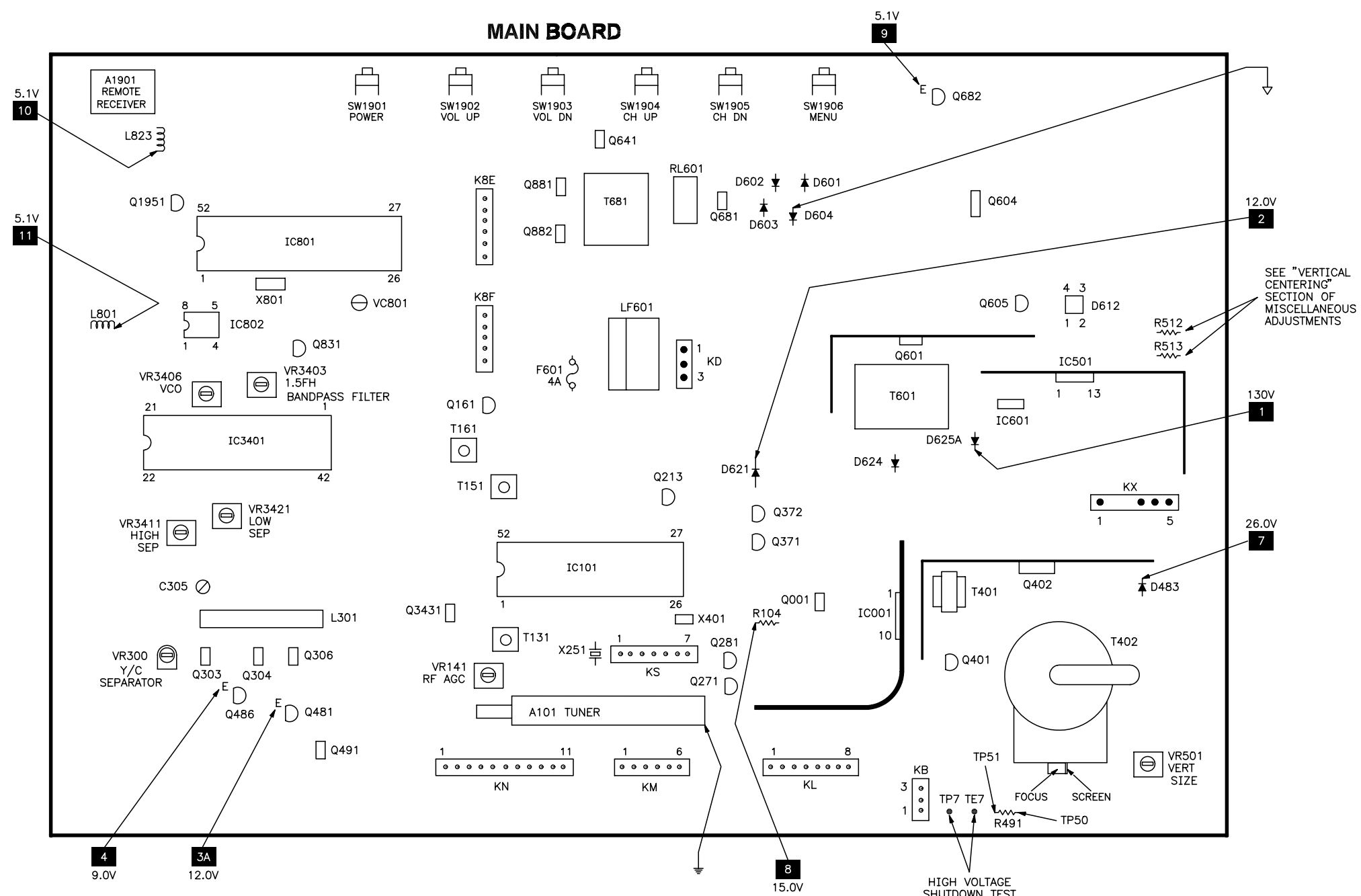
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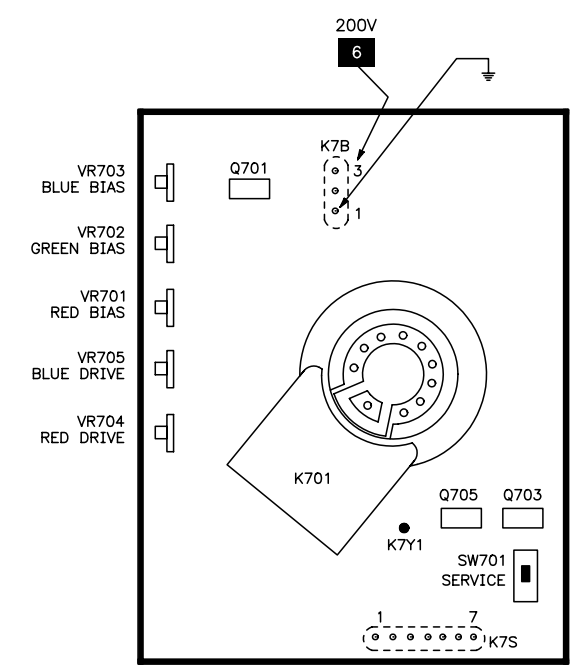
ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1

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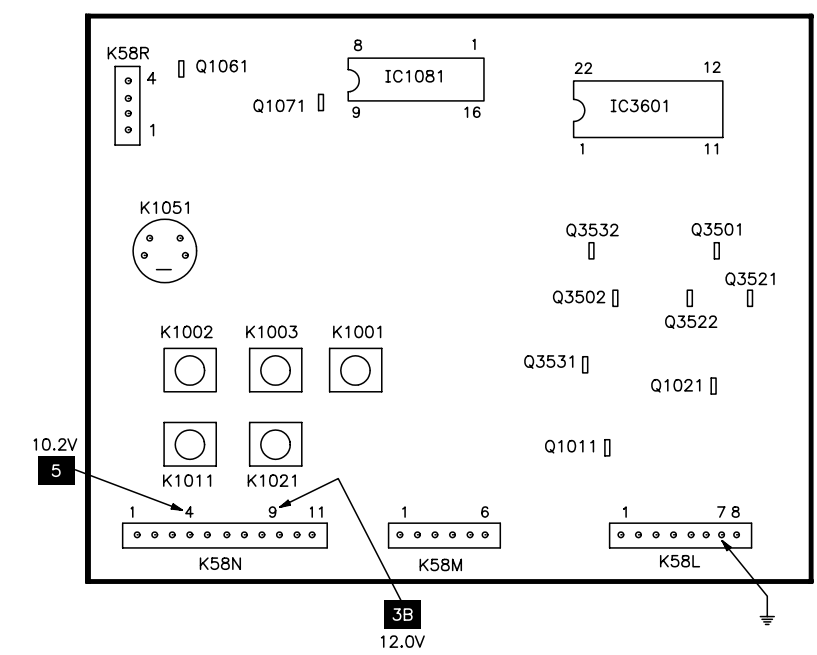
MAIN BOARD



CRT BOARD



A/V BOARD



PIP BOARD

